

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1- 4 (canceled)

5. (currently amended) An apparatus for processing a sample, comprising:
 - a processing chamber provided with a platform on which the sample is placed, the processing chamber being provided with a measurement window formed on a wall surface;
 - exhaustion means for exhausting the processing chamber by a turbo-molecular pump through an exhaust passage equipped with a butterfly valve;
 - gas injector for injecting gas into the processing chamber;
 - a plasma generator for generating plasma in the processing chamber after the gas has been injected into the processing chamber by the use of the gas injector;
 - and
 - a particle detector having a laser scanner and a detector which are installed outside of the processing chamber, the laser scanner introducing a laser from outside of the processing chamber to inside of the processing chamber through the measurement window having a reflection prevention film coated thereon so as to scan a laser beam in a plane inside of the processing chamber and outside of a region where the plasma is generated, and the detector detecting light which is scattered from a particle crossing the plane while the laser beam scans in the plane

and which passes through the measurement window having the reflection prevention film coated thereon.

Claims 6 and 7 (canceled)

8. (currently amended) A plasma processing apparatus comprising:

a plasma processing unit including a chamber, a plate on which a sample is placed, a plasma generator, and a measurement window formed on a wall of the chamber, the processing unit being used for processing the sample placed on the plate with plasma generated by the plasma generator inside of the chamber;

a particle detecting unit which scans a laser beam in a plane inside of the chamber and outside of a region where the plasma is generated, and which detects light scattered from a particle crossing the plane while the laser beam scans the plane; and

a controlling unit for receiving a signal output from the processing unit and a detection signal from the particle detecting unit to control the processing unit and to monitor a state of contaminants inside of the chamber;

wherein the particle detecting unit introduces the laser beam from outside of the processing chamber to inside of the processing chamber through the measurement window having a reflection prevention film coated thereon, and monitors the light scattered from the particle crossing the plane of the processing chamber and passing outside of the processing chamber through the measurement window having the reflection prevention film coated thereon.

9. (previously presented) The plasma processing apparatus according to claim 8, wherein the controlling unit compares the output signal from the processing unit with the detection signal by the particle detecting unit to identify a contaminant source in the processing apparatus.

Claim 10 (canceled)

11. (previously presented) The apparatus according to claim 5, wherein the exhaustion means enables evacuation of the processing chamber, and the plasma generator generates the plasma after the processing chamber has been evacuated.

12. (previously presented) The apparatus according to claim 5, wherein the laser scanner and the detector are arranged at a substantially same position outside of the processing chamber with respect to the measurement window.

13. (previously presented) The plasma processing apparatus according to claim 8, wherein the particle detecting unit includes a laser scanner which introduce the laser beam and a detector which detects the scattered light and which are arranged at a substantially same position outside of the processing chamber with respect to the measurement window.

14. (new) The apparatus according to claim 5, wherein the reflection prevention film is coated on an outside surface of the measurement window upon which the laser is incident from outside of the processing chamber.

15. (new) The plasma processing apparatus according to claim 8, wherein the reflection prevention film is coated on an outside surface of the measurement window upon which the laser is incident from outside of the processing chamber.